

Remarks

Claims 1 - 20 are pending in this action. Claims 1 - 20 stand rejected. Claim 1 is objected to. By this amendment claims 1, 4 – 5, 7-8, 10, 12-13, 16, 18-19 have been amended, claims 2-3, 6, 9, 11, 14, 15, 17, and 20 have been canceled, and claims 21 – 27 have been added. Applicants respectfully request reconsideration of all pending claims herein.

Applicants respectfully submit that the amendments to claims 1 - 20 and additional claims 21 – 27 more clearly define and claim Applicants' invention and distinguish it over the prior art of record. No new matter has been added to the application by virtue of the present amendment.

In the Drawings

The Examiner objected to Figures 1 - 8 as failing to comply with 37 CFR 1.84 or 1.152 because of copy machine marks, numbers and reference characters not oriented in the same direction as the view, and the numbers, letters and reference characters must be at least 32 cm in height. A proposed set of drawings is attached hereto in Appendix A of this amendment to overcome the Examiner's objections. Following the Examiner's approval of the form of the proposed drawings, Applicants will submit a formal set of drawings that will comply in all respects with 37 CFR 1.84 and/or 1.152.

In the Specification

Applicants have submitted a substitute specification to overcome the Examiner's objections regarding the proper use of trademarks, spelling errors, and typos. The substitute specification clarifies the invention by removing ambiguous, confusing, and unnecessary language, and provides consistency in terminology. The substitute specification (clean copy) is attached hereto in Appendix B to provide a more efficient means of amending the specification as filed. The substitute specification contains no "new matter". A marked up copy of the specification is

attached hereto in Appendix C.

In the Abstract

The abstract of the disclosure has been corrected in accordance with MPEP §608.01(b) to comply with the Examiner's objection that it contains grammatical or typographical errors.

Claim Objections

Applicant has corrected Claim 1 to include a period at the end of the claim and thus overcome the Examiner's objection that the claim failed to end with a period.

Claim Rejections – 35 U.S.C. §112, second paragraph

The Examiner has rejected claims 1 – 20 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner stated that the claims are generally replete with informal and ambiguous language that fails to comply with the requirements of 35 U.S.C. § 112, second paragraph.

Applicants have amended Claim 1 to remove the informal language "gets results". Applicants have further amended Claim 1 to include language that more clearly defines the claimed invention. The claim now reads, "a simulator module comprising an API wherein said API comprises at least one function and wherein said simulator module uses said function to define a first circuit wherein said function is recorded; a code module which comprises a compilation of a plurality of said recorded functions;" Applicant has further amended Claim 1 to read, "an interface between said code module and a user program, wherein a user defines said code module inputs, outputs and load parameters". Applicant has also removed duplicate language from Claim 1, "an interface to the user program" because it was a typographical error.

Applicants have canceled Claims 2 and 3.

Applicants have amended Claims 4 and 5 to more clearly define “load description” as a “circuit parameter” and to distinguish it from a software loading process.

Applicants have canceled Claim 6.

Applicants have canceled Claim 9.

Applicants have amended Claim 10 to recite “a method of modeling and simulating a circuit” to further clarify that the method creates a model of a circuit and simulates the circuit using the model. Applicants have amended the paragraph “providing a record of calls made to a circuit simulator during construction and setup of circuits” to read “recording a plurality of said functions used by said simulator module during said step of defining a first circuit” to clarify that the functions used to create the circuit are recorded.

Applicants have further amended Claim 10 to remove the indefinite language, “adding an interface that can be called by a user program.” to read, “adding an interface to said code module which provides access to said code module from a user program”; and the indefinite language, “such that the user program can define inputs, outputs, and loads for the circuit” to read “assigning inputs, outputs and load parameters to said code module by calling said code module through said interface”.

Applicants have canceled Claim 11.

Applicants have amended Claim 12 to more clearly define that the recorded functions can be interpreted as computer code, which is compiled. The claim now reads, “The method of claim 10, further comprising the step of compiling said recorded functions into a library”.

Claim 13 has been amended to more clearly define the method of claim 10. Claim 13 now reads, “The method of claim 10, wherein said step of assigning said parameters to said code module, comprises the step of providing a call-back function”.

Claim 14 has been canceled.

Claim 15 has been canceled.

The Examiner rejected Claims 16 – 20 for primarily having the same deficiencies as Claims 10 – 14. Applicants have amended Claims 16 – 20 to overcome these deficiencies in a manner similar to the amendments made for Claims 10 – 14.

Claim Rejections - 35 U.S.C. § 101

The Examiner stated that he is unable to make a proper analysis of the statutory nature of the claimed invention. The Examiner further stated that Claims 1 – 9 are directed toward a computer system defined according to the method performed by the invention. Applicants respectfully submit that the invention is directed toward an improved circuit simulation system for rapidly reproducing a circuit on-demand and accurately simulating how that circuit will operate under a given set of conditions. To comply with MPEP 2106 regarding the statutory nature of computer related inventions, Applicants' have amended Claims 10 – 20 to be tangibly embodied on a computer readable medium.

The invention provides a novel means to not only produce more accurate simulation results in a shorter time than traditional simulator methods, but also provides a means to simulate any applied circuit parameter (e.g. power, noise, current, loads, timing, etc.) and is not limited to a specific electrical analysis nor physical devices, which is useful in the technological arts. The invention also provides a novel and useful means of hiding proprietary detailed circuit information, without restricting use of the circuit. In light of the foregoing statements, Applicants respectfully submit

that the 35 U.S.C. § 101 rejection to Claims 1 – 20 have been overcome.

Claim Rejections - 35 U.S.C. § 103(a)

The Examiner rejected claims 1 - 20 under 35 U.S.C. § 103(a), as being unpatentable over U.S. Patent No. 6,077,304 issued to Kasuya (Kasuya) in view of “How Computers Work, 6th Edition” by Ron White (White), further in view of “IEEE 100 The Authoritative Dictionary of IEEE Standards Terms, Seventh Edition” (IEEE), further in view of “Microsoft Computer Dictionary, Fifth edition” (Microsoft). The Examiner stated that Kasuya discloses a circuit simulator implemented on a computer system including a user interface and an API that enables other programs to control the operation of the circuit simulator through procedure calls. The Examiner further stated that White and Microsoft disclose concepts such as dynamic link libraries and that IEEE discloses definitions for APIs.

Applicants submit that the above Examiner statements are correct in terms of known art, however, Applicants respectfully submit that while the present invention *uses* these well-known concepts to accomplish in-part an automated circuit modeling and simulation technique, it also uses a novel means to record function calls and further compile those recorded calls into a library that represents a black box circuit (See Lehner, Abstract, Summary, Paragraph 81, 91, 104, Fig. 7, Claims 1, 7 – 8, 10, 12, and 18). The black box circuit can then be simulated independently or as a part of a larger circuit design. The user is unaware of any circuit details inside the black box circuit yet is still able to accomplish accurate simulation in a shorter period of time. None of the cited references teach a means for “secretly” modeling and simulating a circuit in such a way that the user cannot have access to the circuit details, and further, does not *need* access to perform an accurate simulation.

Furthermore, the present invention is not limited to simulating a particular electrical or environmental parameter for a circuit, but rather can simulate any conceivable input, output and/or load parameter that has been converted to a computer readable format, without having to change simulators (See Lehner, Summary, figures 1 and 6, Claims 1, 10, and 16). The enhanced accuracy of the methodology stems from the method's ability to instantaneously calculate any parameter value at any node of a circuit using input, output, and loading parameters simultaneously.

Applicants have amended claims 1 – 20, and added claims 21 - 27 to clarify the claimed invention, as noted above, and thus patentably distinguish it from the references cited by the Examiner. Accordingly, Applicants respectfully submit that the rejection of claims 1 - 20 under 35 U.S.C. § 103(a) has been overcome and all claims are in condition for allowance.

Summary and Conclusion

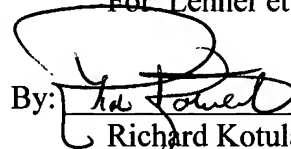
Based on the foregoing, it is respectfully submitted that the pending claims in the subject patent application are in condition for allowance and that the application may be passed to issuance.

The Examiner is urged to call the undersigned at the number listed below if, in the Examiner's opinion, such a phone conference would aid in furthering the prosecution of this application.

Respectfully submitted,

For: Lehner et al

By:



Richard Kotulak

Registration No. 27712

Telephone No.: (802) 769-4457

Fax No.: (802) 769-8938

EMAIL: kotulakr@us.ibm.com

International Business Machines Corporation
Intellectual Property Law - Mail 972E
1000 River Road
Essex Junction, VT 05452

Appendix A

Proposed Drawings 1 – 7 (4 sheets)

Appendix B

Substitute Specification

Appendix C

Substitute Specification (marked up copy)